

## **ABSTRACT**

Disclosed is a valve system that provides a means of controlling the charging and exhausting of the combustion chamber(s) of internal combustion engines. In this system, asymmetrical valve bodies are first lifted a nominal distance from their sealing surfaces, then are rotated by their non-centered stems, which operate in conventional valve guides. Rapid port opening, relatively long duration at the full open position, and rapid port closing are achieved. This dual-action valve motion is provided by a drum type camshaft featuring radial protrusions to lift the valves from their sealing surfaces and circumferential cam grooves, which rotate the valves in palindromic fashion. A multi-level valve layout allows for relatively larger port sizes, as it lets the valves move without interference with one another. A mechanism for actuating the valves by electromechanical means is also disclosed.

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